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PATENT APPLICATION  
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1-30-02

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

Sean R. WAKAYAMA

Serial No.: 08/917,480

Filed: August 26, 1997

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: Atty. Dkt. No.: R-8767

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: Group Art Unit: 3644

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: Examiner: T. DINH

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GROUP 3600

For: RECONFIGURATION CONTROL SYSTEM FOR AN AIRCRAFT WING

**REQUEST FOR RECONSIDERATION UNDER 37 C.F.R. §1.115**

Honorable Assistant Commissioner  
for Patents  
Washington, D.C. 20231

Sir:

Responsive to the Office Action dated October 24, 2001, reconsideration and withdrawal of all outstanding rejections are respectfully requested for the reasons set forth in detail below.

Claims 1-20 are pending in the application.

The Office Action rejects claims 6, 16, and 18<sup>1</sup> under 35 U.S.C. §112, 2<sup>nd</sup> paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the Applicant regards as the invention. In particular, the Office Action alleges that the phrase "the bending moment" lacks antecedent basis. However, the Office Action has not demonstrated that the term "the" in the phrase "the bending moment" signals an attempt to establish antecedent basis. > what?

With respect to claim 6 and 16, the Examiner is asked to reconsider his objection to the phrase "the bending moment with respect to a bend axis of the wing," used because there is no

<sup>1/</sup> Applicant respectfully submits that neither claim 18 nor any of the other claims recite "the bending moment;" thus, the rejection will be treated as if claims 6 and 16 were rejected.

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possessive case for inanimate nouns in the English language. The Examiner is reminded that, in English, the definite article "the" has uses other than referring to antecedents, the online version of the **Merriam-Webster's College Dictionary** (copy attached) being offered as evidence thereof. See definition **2.b (1)**, which indicates that the word "the" can be "used as a function word before a noun to limit its application to that specified by a succeeding element in the sentence," i.e., to denote that the "bending moment" references the phrase that follows, e.g., "with respect to a bend axis" in claim 6. Since Applicant has formulated the claim language in accordance with common and approved English usage, the Examiner is respectfully requested to reconsider and withdraw the 35 U.S.C. § 112, 2<sup>nd</sup> paragraph rejection of claims 6 and 16.

Moreover, the Examiner is respectfully reminded that the only valid basis on which to object to lack of antecedent basis under 35 U.S.C. § 112, second paragraph, is where the claim becomes subject to dual and conflicting interpretation, which usually arises from double-inclusion problems.

In short, claims 1-20 have been carefully reviewed. It is respectfully submitted that claims 1-20, as amended, are both definite and entirely proper under 35 U.S.C. §112, since those of ordinary skill in the art can easily ascertain the metes and bounds of the present invention from the pending claims. The first sentence of the second paragraph of 35 U.S.C. §112 requires only that claims "set out and circumscribe a particular area with a reasonable degree of precision and particularity." In the absence of evidence to the contrary, what the claim defines is what the applicant regards as his invention. If those skilled in the art can tell whether any particular embodiment is within the scope of a claim, the claim fulfills its purpose as a definition. See In re Miller, 169 U.S.P.Q. 597 (CCPA 1971). It is respectfully submitted that those skilled in the art would have no trouble determining the metes and bounds of the invention from the pending claims.

The Office Action rejects claims 1-5, 7-15, 17, and 19-20 under 35 U.S.C. §103(a) as being unpatentable over Ashkenas (U.S. Patent No. 42,549,045) in view of Whitener (U.S. Patent No. 5,088,661). This rejection is respectfully traversed.

As mentioned in responding to previous Office Actions, 35 U.S.C. §103 authorizes a rejection where to meet the claim, it is necessary to modify a single reference or to combine it with one or more other references. After indicating that the rejection is under 35 U.S.C. 103, the examiner should set forth in the Office Action (1) the relevant teachings of the prior art relied upon, preferably with reference to the relevant column or page number(s) and line number(s) where appropriate, (2) the difference or differences in the claim over the applied reference(s), (3) the proposed modification of the applied reference(s) necessary to arrive at the claimed subject matter, and (4) an explanation why such proposed modification would have been obvious to one of ordinary skill in the art at the time the invention was made. See M.P.E.P. §706.02(j). In the discussion which follows, the specific requirements for establishing a prima facie case of obviousness will be signaled by the terminology Item (1), Item (2), etc.

It is respectfully submitted that the instant Office Action has gained failed to comply with these minimum requirements. Applicant is left to guess which passages of the applied references are being relied upon in formulating the rejection. Moreover, Applicant can only speculate as to how the references are being combined and to what passage of the references is being employed as supplying the motivation for the combination. For example, the Office Action does to address replacement of the control system taught by the '045 patent with that taught by the '661 patent. Moreover, the fact that the teachings of the primary and secondary references cannot be combined as they teach away from one another is totally missed in the Office Action. In essence, the Office Action has stated that the '045 and '661 patents exist and that these patents, in combination with a holding of "inherency" render claims 1, 11, and 19 obvious. However, that is not the criteria established by the U.S. Patent

and Trademark Office and countenanced by the courts in establishing that the claimed invention is obvious.

It is respectfully submitted that the Office Action has not set forth a “prima facie” case of obviousness for at least the following reasons:

First, since the Examiner admits that the primary reference does not teach the recited control surface configuration system and relies on the secondary reference in combination with inherency to correct the deficiency in the primary reference. Stated another way, the combination of the primary and secondary references are admittedly deficient with respect to teaching “predetermined positions, which in combination, optimize the spanwise force distribution across the wing for each of the plurality of different flight conditions.” The Office Action indicates only that “at a certain predetermined positions, it is inherent that spanwise force distribution across the wing is optimized since this would obviously optimize the maneuverability of the system.” As Applicant has noted repeatedly, inherency is not an element of and can not be used to demonstrate obviousness. Thus, since the Office Action tacitly admits that the primary and secondary references do not teach “predetermined positions, which in combination, optimize the spanwise force distribution across the wing for each of the plurality of different flight conditions,” and the Examiner cannot import the missing limitation into the combination using the Doctrine of Inherency, not possible combination of the applied references could render claims 1, 11, and 19 obvious.

The Office Action again seems to imply that at some predetermined (but undefined ) position, it is inherent that the spanwise force distribution across the wing is optimized. Even assuming *arguendo* that this assessment is correct, the combination would still fail to render the claimed invention obvious. As discussed above, it is black letter law that obviousness cannot be established by inherency.

Secondly, it is respectfully submitted that the rejection set forth in the Office Action is based on a superficial understanding of the actual teachings of the primary and secondary references. For example, the '045 teaches a tail-less aircraft equipped with slots 10 on the leading edges of each wing W, which are designed specifically to prevent wing tip stall. See column 3, lines 22-25. Column 5, lines 35-45, describe the automatic operation of the slots 10 at various lift coefficients at the wing tips. In contrast, the '661 patent teaches that the loads and bending moment imposed on the wing can be concentrated near the center of the wing. Thus, the combination of the primary and secondary references are in conflict, i.e., the '661 patent teaches away from the '045 patent. However, the test for obviousness is what the combined teachings of the references would have suggested to one of ordinary skill in the art, and all teachings in the prior art must be considered to the extent that they are in analogous arts. Where the teachings of two or more prior art references conflict, the examiner must weigh the power of each reference to suggest solutions to one of ordinary skill in the art, considering the degree to which one reference might accurately discredit another. See M.P.E.P. § 2143, citing In re Young, 18 USPQ2d 1089 (Fed. Cir. 1991).

Third, the references are not combinable, since they control surface and system teachings are in conflict. As mentioned in the '045 patent, the center of gravity of the aircraft may be moved aft by the addition of a tail. However, since the '045 patent teaches a tail-less aircraft, the control system must accommodate an aircraft with a forward center of gravity. In contrast, the '661 patent teaches a control system for aircraft where the center of gravity is well aft of the wing. See column 3, lines 20-32. This section goes so far as to indicate that the control surface behave in a manner opposite to that of conventional control surfaces. Thus, even if the control system were moved from the secondary to the primary reference, the system could not be employed on the aircraft taught by the '045 patent.

Fourth, and finally, the '661 patent teaches away from the claimed invention. For example, the paragraph bridging columns 1 and 2 points out that:

A related disadvantage is that the trailing edge control members of conventional aircraft are so designed and operated that large loads are imposed on the wing at significant distances from the aircraft body. These loads can cause unwanted wing bending; they can also make rapid pull-ups unsafe.

Thus, the '661 patent teaches away from the very concept that for which the Office Action relies on the secondary reference. One of ordinary skill in the art, following the guidance found in the '661 patent, would be led in a direction divergent from the path that was taken by the Applicant because the '661 patent teaches away from the invention of claims 1, 11, and 19. Since a reference which teaches away is a significant factor in determining obviousness, the nature of that teaching is highly relevant and must be considered. See In re Gurley, 31 U.S.P.Q.2d 1130 (Fed. Cir. 1994). The Examiner's analysis gives no weight to the teachings in the secondary reference which contradicts the Examiner's position. This selective view of the '661 patent allows the Examiner to focus on the trailing and independently operated control surfaces while completely ignoring, for example, that the '661 patent teaches away from predetermined positions, which in combination, optimize the spanwise force distribution across the wing for each of the plurality of different flight conditions.

For all of the reasons numerated above, it is respectfully submitted that the Examiner has not set forth a prima facie case of obviousness. In particular, given that one of ordinary skill in the art would have recognized a fundamental conflict in the teachings of the applied references, a conflict not recognized, much less addressed, by the Office Action, that one would not have attempted to combine the primary and secondary references as suggested in the Office Action. In that the combination of references is improper, a prima facie case of obviousness cannot be established by the combination. In short, since (1) that the applied references cannot be combined as suggested and (2) that at least two limitations of independent claims 1, 11, and 19 are completely absent in the proposed combination, it is respectfully submitted that no possible combination of the applied references could render the invention recited in claims 1-20 obvious. The Examiner is therefore requested to reconsideration and withdrawal of the 35 U.S.C. §103(a) rejection is respectfully

requested. Claims 2-5 and 7-10, depending from claim 1, claims 12-15 and 17, depending from claim 11, and claim 20, depending from claim 19, are allowable for all of the reasons given regarding the respective independent claims.

The Office Action rejects claims 6, 16, and 18<sup>2</sup> are rejected under 35 U.S.C. 103(a) as being unpatentable over Ashkenas as modified by Whitener as applied to claims 1 and 11 above, and further in view of Lewis. This rejection is respectfully traversed. More specifically, the addition of Lewis does nothing to correct the deficiencies and conflicts associated with the primary and secondary references. Thus, the combination of references including Lewis could not render the inventions of claims 1 and 11 obvious. Therefor, the same combination cannot possibly render claims 6 and 16 obvious. The Examiner is respectfully requested to reconsider the 35 U.S.C. §103(a) rejection of claims 6 and 16.

In light of the remarks presented above, it is respectfully submitted that the application is in condition for allowance, and such action is hereby solicited. If any points remain in issue which the Examiner feels may best be resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

Respectfully Submitted,



Raymond H. J. Powell, Jr.  
Reg. No. 34,231

WESTERLUND · POWELL, P.C.  
100 Daingerfield Rd., Suite 100  
Alexandria, Virginia 22314-2886

Ph: (703) 706-5862 - Fax: (703) 706-5860

Date: January 24, 2002

Attorney Docket No. R-8767

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<sup>2/</sup>See Footnote 1.



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17 entries found for **the**.

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the[1,definite article]	<input type="checkbox"/>	<input type="button" value="Go"/>
the[2,adverb]	<input type="checkbox"/>	
the[3,preposition]	<input type="checkbox"/>	
Bronx	<input type="checkbox"/>	
Delta, The	<input type="checkbox"/>	
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Main Entry: **the**

Pronunciation: *before consonants usually [t̬h] &, before vowels usually [t̬h]E, esp Southern before vowels also [t̬h] &; for emphasis before titles and names or to suggest uniqueness often ' [t̬h]E*

Function: *definite article*

Etymology: Middle English, from Old English *thE*, masc. demonstrative pronoun & definite article, alteration (influenced by oblique cases -- as *thæs*, genitive -- & neuter, *thæt*) of *sE*; akin to Greek *ho*, masculine demonstrative pronoun & definite article -- more at [THAT](#)

Date: before 12th century

**1 a** -- used as a function word to indicate that a following noun or noun equivalent is definite or has been previously specified by context or by circumstance <put *the* cat out> **b** -- used as a function word to indicate that a following noun or noun equivalent is a unique or a particular member of its class <*the* President> <*the* Lord> **c** -- used as a function word before nouns that designate natural phenomena or points of the compass <*the* night is cold> **d** -- used as a function word before a noun denoting time to indicate reference to what is present or immediate or is under consideration <in *the* future> **e** -- used as a function word before names of some parts of the body or of the clothing as an equivalent of a possessive adjective <how's *the* arm today> **f** -- used as a function word before the name of a branch of human endeavor or proficiency <*the* law> **g** -- used as a function word in prepositional phrases to indicate that the noun in the phrase serves as a basis for computation <sold by *the* dozen> **h** -- used as a function word before a proper name (as of a ship or a well-known building) <*the* Mayflower> **i** -- used as a function word before the plural form of a numeral that is a multiple of ten to denote a particular decade of a century or of a person's life <life in *the* twenties> **j** -- used as a function word before the name of a commodity or any familiar appurtenance of daily life to indicate reference to the individual thing, part, or supply thought of as at hand <talked on *the* telephone> **k** -- used as a function word to designate one of a class as the best, most typical, best known, or most worth singling out <this is *the* life> <*the* Pill> -- sometimes used before a personal name to denote the most prominent bearer of that name

**2 a (1)** -- used as a function word with a noun modified by an adjective or by an attributive noun to limit the application of the modified noun to that specified by the adjective or by the attributive noun <*the* right answer> <Peter *the* Great> **(2)** -- used as a function word before an absolute adjective or an ordinal number <nothing but *the* best> <due on *the* first> **b (1)** -- used as a function word before a noun to limit its application to that specified by a succeeding element in the

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sentence <*the* poet Wordsworth> <*the* days of our youth> <didn't have *the* time to write> (2) -- used as a function word after a person's name to indicate a characteristic trait or notorious activity specified by the succeeding noun <Jack *the* Ripper>

**3 a** -- used as a function word before a singular noun to indicate that the noun is to be understood generically <*the* dog is a domestic animal> **b** -- used as a function word before a singular substantivized adjective to indicate an abstract idea <an essay on *the* sublime>

**4** -- used as a function word before a noun or a substantivized adjective to indicate reference to a group as a whole <*the* elite>

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### Pronunciation Symbols

\&\ as a and u in abut

\&\ as e in kitten

\&r\ as ur/er in further

\a\ as a in ash

\A\ as a in ace

\ä\ as o in mop

\au\ as ou in out

\ch\ as ch in chin

\e\ as e in bet

\E\ as ea in easy

\g\ as g in go

\i\ as i in hit

\I\ as i in ice

\j\ as j in job

\ng\ as ng in sing

\O\ as o in go

\o\ as aw in law

\oi\ as oy in boy

\th\ as th in thin

\[th]\ as th in the

\ü\ as oo in loot

\u\ as oo in foot

\y\ as y in yet

\zh\ as si in vision

For more information see the Guide To Pronunciation.

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